



Security Information Collaboratives

A Guide for Water
Utilities





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Contents

Introduction 1

What is a Security-Information Collaborative? 1

What are the Benefits of a Security-Information Collaborative? 2

How to Use this Guide 3

Chapter 1. Seven Steps to Forming a Security-Information Collaborative 5

Step 1: Evaluate your utility’s current situation to determine whether a collaborative is necessary 5

Step 2: Identify organizations that should be part of the collaborative 7

Step 3: Obtain upper management support and keep them informed 8

Step 4: Invite potential members of the collaborative to meet and discuss its formation 9

Step 5: Establish a meeting schedule and location 9

Step 6: Agree on how the collaborative will be run 10

Step 7: Establish goals and specific steps for achieving them 11

Chapter 2. Operating and Maintaining a Security-Information Collaborative 13

Chapter 3. Benefits of a Security-Information Collaborative 15

Bay Area Security Information Collaborative (BASIC): 15

The Milwaukee Inter-Agency Clean Health Water Advisory Council: 16

Newport News Waterworks: 16

Chapter 4. Three Case Studies 17

BASIC, a Utility-to-Utility Collaborative 17

The Milwaukee Inter-Agency Clean Water Advisory Council, a Utility-to-Public-Health Collaborative 20

Newport News Waterworks, a Utility-to-Law-Enforcement Collaborative 23

What Makes a Collaborative Successful? 25

Conclusion 26

Appendix A. Sample Resource Documents 27





Introduction

Water infrastructure-related emergencies can vary greatly in their severity and extent. They can run the gamut from waterborne disease outbreaks and vandalism to terrorist threats and actions suddenly made conceivable by the events of September 11, 2001. Drinking water and wastewater utilities have been working harder than ever to improve or maintain security. Information about potential threats to these systems—and the appropriate responses to those threats—is essential to the success of any security improvements. Drinking water and wastewater utilities can work with each other, state primacy agencies, the public health community, and law enforcement and other first responders to collect and share pertinent information. This guide offers suggestions on how to establish a successful security-information collaborative. In preparing the guide, the U.S. Environmental Protection Agency (EPA) drew on the experiences of established security-information collaboratives across the country.

What is a Security-Information Collaborative?

A security-information collaborative is a group of organizations and agencies formed to share information and address common issues regarding security—in the case of this guide, water security. These collaboratives can take many forms, from ad hoc groups that meet only as needed to formal organizations complete with charters, mission statements, operating budgets, and regularly scheduled meetings.

This guide describes three types of security-information collaboratives: utility to utility, utility to public health, and utility to law enforcement. Its step-by-step approach will help individual utilities identify and create security-information collaboratives that best meet the needs of their particular situations. Its case studies will show how utilities can enhance their security by working more closely with other entities.

Figure 1: Range of Options for Security Information Collaboratives



What are the Benefits of a Security-Information Collaborative?

The principal benefit of a collaborative is enhanced drinking water and wastewater security and public health protection. Among the many other benefits a collaborative provides is the opportunity for utility officials to develop working relationships with the people on whom they will rely during an emergency. Another benefit cited by members of the collaboratives profiled in this guide is the opportunity to share information from a variety of sources. For example, the water utility may subscribe to the Water Information Sharing and Analysis Center (WaterISAC), from which it receives early warnings of potential physical, contamination, and cyber threats, as well as information about security. State primacy agencies can provide expertise, resources, and information. Local law enforcement officials obtain updates from the Department of Homeland Security and regional offices of the Federal Bureau of Investigation (FBI). Public health agencies receive information from the Centers for Disease Control and Prevention (CDC) and are part of new disease surveillance programs being implemented around the country. Although the information can sometimes be redundant, a focused effort to share it can ensure that utilities have a more comprehensive picture of the current security condition. Other benefits of collaboratives include:

- Improved detection of, response to, and recovery from security crisis events
- Enhanced working knowledge and understanding of different professional disciplines
- More effective use of different skills and resources
- Increased effectiveness in educating consumers and responding to questions from the media and public
- Improved intergovernmental communication
- Better understanding of various organizational perspectives and enhanced ability to resolve conflicts in a non-crisis environment
- Heightened sense of trust and community among organizations
- Identification and elimination of obstacles that prevent full cooperation
- Joint project development
- Increased efficiency through resource and information sharing
- Multiple communication links
- Enhanced problem-solving and team-building capabilities
- Identification and coordination of inter-organizational dependencies

How to Use this Guide

EPA has developed this guide to inform drinking water and wastewater utilities, and others, about the benefits of establishing collaboratives to share information on water security. The guide provides step-by-step suggestions for establishing a collaborative. Case studies of three types of collaboratives are included to show how utilities can coordinate with various key water security partners. These three case studies are:

- The San Francisco Bay Area Security Information Collaborative (BASIC), a utility-to-utility collaborative
- The Milwaukee, WI, Inter-Agency Clean Water Advisory Council, a utility-to-public-health collaborative
- The Newport News, VA Waterworks, a utility-to-law-enforcement collaborative



While these three collaboratives are certainly not the only types possible, they do indicate the variety of opportunities available to help identify threats, reduce vulnerabilities, detect potential contamination, and respond quickly to terrorist threats or attacks. Chapter 1 provides suggestions for starting a security-information collaborative. Operational guidelines are offered in Chapter 2. Chapter 3 discusses some of the benefits of a collaborative. Chapter 4 describes the case studies in detail. Appendix A gives sample documents. How an individual utility might proceed will be based on the local issues identified and agreed upon by the potential participants in a security-information collaborative. Therefore, the composition of collaboratives across the country and their operation will vary.



Chapter 1. Seven Steps to Forming a Security-Information Collaborative

Security-information collaboratives can be a useful way to continually collect and share important information about water security. This chapter presents seven steps you can take to form a collaborative. The process begins with basic questions about your utility and circumstances to help you decide whether a collaborative is necessary. It then takes you through the steps needed to create a collaborative.

Step 1

Evaluate your utility's current situation to determine whether a collaborative is necessary

A collaborative can help ensure access to information today and over the long term. To decide if a collaborative would be worth pursuing, you should answer several basic questions about your utility, your potential partners, and the environment in which you operate.

In many areas of many states, more than one utility provides drinking water and wastewater services. These utilities often share resources, such as drinking water supplies, and may face common problems. What do you know about your neighboring water utilities? Do you know whether they conducted vulnerability assessments, and if so, what they found? What do you know about their emergency response plans? Do you know if they ever conduct security exercises and, if they do, what they are learning from those exercises? Do you know whether other utilities have access to information that you do not have? What do they know about your utility, and what would you like for them to know? Are opportunities for regular interactions with these utilities already available?

You may need to coordinate your security plans with local law enforcement agencies and other first responders, as well as the public health community. Do you regularly interact with these groups? Do you know whom to contact in case of an emergency? If your utility serves more than one jurisdiction, do you know whom to contact in each jurisdiction? And if your utility serves more than one jurisdiction, is it clear who will respond if an emergency arises? Are you familiar with any safety and security guidelines issued by your local police or fire department? Are the police, fire fighters, and other emergency personnel familiar with your facilities and their operation? Do they know where your utility's critical assets are? Do they know where you store potentially dangerous materials?

Remember, your utility's operating environment may be constantly changing. Your answers to the questions above might be different today than they would have been 3 or 4 years ago—and they may be different 3 or 4 years from now. The potential threats to your system are also evolving, as are your potential responses. Positions in organizations—and the responsibilities associated with them—may change with time. The individuals who fill these positions may retire or move on to other opportunities. Does your utility have good working relationships with other utilities, police and emergency responders, and public health officials, or do you need to cultivate long-term relationships with them? Are you able to keep current with changes in these organizations? Can you ensure that you and your counterparts in other organizations will continue to have access to up-to-date information?

If you do not have regular contact with neighboring utilities, the police and fire departments, and the public health community, and you are unfamiliar with their security and emergency response plans, a security-information collaborative can help. A collaborative can help you share information with other utilities in your region on an on-going basis. It can help you coordinate your plans over the long-term with law enforcement, fire departments, and public health officials and keep you up-to-date on water security issues in your region.

A successful collaborative often begins with one person who has the vision and drive to bring together different groups for a common purpose. In each of the case studies presented in Chapter 4, the person who organized the collaborative had the authority to make key decisions. That authority either was already a part of that person's position in the utility or was delegated to him or her by senior management. So before you begin, you need to ensure that you have individuals who possess the skills and drive to bring the collaborative together and the support of senior management to form the collaborative.



Step 2

Identify organizations that should be part of the collaborative

Collaboratives tend to work best when their member organizations share mutual goals or values and are similar in character. Organizations you include in your collaborative will depend on the information you need. For example, if you need to know the emergency response plans of other water utilities in your region, you should focus on a utility-to-utility collaborative. If threat and countermeasure information is needed, law enforcement should be brought in. If you need to coordinate with the public health community, its representatives should be part of the collaborative. Regardless of the type of collaborative you form, it is important to identify the agencies and organizations that share common concerns and can bring additional information and knowledge to your utility and to the collaborative's other members.

Organizations you should consider include, but are not limited to:

- Water utilities in the region that share similar security concerns or issues
- The state primacy agency
- The state or local health department
- The regional FBI office
- Local police, fire fighters, and other first responders
- Local Emergency Planning Committees
- The Regional EPA Office
- Local Joint Terrorism Task Forces
- Laboratories
- Universities
- Military Installations

Forming the Collaborative

A driving force behind the formation of BASIC was the need to coordinate emergency planning and responses among many of the large urban water utilities in the San Francisco Bay Area. BASIC is one of many regional organizations in the Bay Area, which includes several large cities and water utilities. Its original members were in contact with each other through the California-Federal Bay-Delta program (CALFED), a consortium of state and federal agencies that addresses issues regarding the San Francisco Bay and Sacramento-San Joaquin Delta Estuary. BASIC's original members met in response to 9/11 and agreed to form BASIC to help coordinate their responses to security issues.

A collaborative needs to be big enough to ensure there are enough people to do its work, but it should not be so big that its meetings become unwieldy and unproductive. Experience shows that collaboratives of 8 to 12 persons work very well. Other individuals can be added as needed or participate in specialized subcommittees or workgroups. Subcommittees typically report directly to the collaborative but do not participate in its regular deliberations. Larger groups may be necessary sometimes and should not be ruled out, but larger collaboratives can be more difficult to operate than smaller ones.

Before forming your own collaborative, it is important to identify any that may already exist. A group established to address non-security-related issues might form the basis of your security-information collaborative. Your utility may be able to join an existing collaborative or form a subgroup or working group within one. At the very least, you should be able to identify the key players in the established collaboratives and ask them whether they would be interested in joining a new one dedicated to water security information. Most likely, you will have to show them that the benefits of forming a collaborative will outweigh the costs and time commitment of doing so.

The level of participation by individual members tends to be directly related to the stake their organizations have in the collaborative. Although ex-officio-type members may be appropriate, for the most part each member should feel he or she has an equal stake in the collaborative.

Step 3

Obtain upper management support and keep them informed

Upper management support is critical to the formation and maintenance of security-information collaboratives. Financial support is often in the form of in-kind services, and members must take time from other duties and responsibilities to attend meetings of the collaborative. Upper management support not only ensures that the necessary resources are available for the collaborative to function, it also validates the effort. The need to report to management on its activities also forces the group to move forward on projects and other efforts.

Participation in the Collaborative

It is essential that the right people from each organization participate in the collaborative. The Newport News Waterworks determined early in the process that it needed the participation of the uniformed patrol commanders from each precinct. The commanders would oversee any response to an event, and they needed information about the Waterworks' assets in their jurisdictions. The support of the police chief was important, but the participation of these commanders was essential.

Step 4

Invite potential members of the collaborative to meet and discuss its formation

The group's initial meeting is an excellent time to explore the benefits of working together and to understand what each member organization can contribute. At this meeting, it is important to identify the areas of common concern and, perhaps, develop a mission statement or set of goals for the collaborative. The personalities of its members have much to do with whether a group functions well. Try to identify people who are not only in the right positions in their organizations, but who are also able to work cooperatively. When reaching out to other organizations, contacting upper management first may be necessary, but be clear that the participating members should be the persons who will do the collaborative's work.

Do not be discouraged if the first meeting does not go as well as you had hoped. Often, this initial meeting may be the first time that some of the group's potential members have had a chance to sit and talk. There may be differences in philosophy, terminology, and approaches that need to be understood. Group dynamics and individual personalities will have a significant impact on the meeting's outcome.

The formation of a group or the conduct of a meeting generally follows a well-documented pattern: form, storm, norm, and perform. The group is brought together (form). Its members each express their views and state their positions and expectations (storm). Eventually, the group "normalizes" as its members decide that there is value in working together and seek areas of agreement (norm). Last, the group agrees on future joint actions (perform).

Step 5

Establish a meeting schedule and location

Most successful collaboratives meet regularly. Face-to-face meetings are best, especially at the beginning of the process. These meetings provide the best opportunity for members to get to know each other prior to an emergency. How often the collaborative meets can vary. It often depends on the amount of work to be done, availability of members, and security conditions. At first, the group should meet at least once a month, preferably at a set day and time (e.g., the third Thursday of each month from 2:00 to 5:00 p.m.). Meetings can be held at the same location or rotated among the member organizations. Rotating the meeting locations means each organization shares in the cost of meeting rooms and refreshments; it also helps each member feel that his or her organization is a full member of the group.

Step 6

Agree on how the collaborative will be run

As previously stated, there is no single type of collaborative. Some are formal organizations with written charters and formal positions. Others are loose, open organizations with no formal positions whose membership may change over time. You will need to decide how formal or informal your collaborative will be. Some questions to consider include:

- Is a formal charter or memorandum of understanding necessary for the collaborative?
- Will the collaborative have a chairperson who develops the agenda, facilitates the meetings, and prepares notes or follow-up action items?
- How will the chairperson be selected?
- Will the chairmanship rotate among all collaborative members or stay with one organization?
- Will the collaborative have a budget and, if so, how will the budget be handled?
- Will the collaborative be supported only by staff from member organizations or will the collaborative hire staff to manage its work?
- How will the collaborative members communicate between meetings?

How your collaborative answers these questions will depend on individual personalities, the requirements of the member organizations, and circumstances. Collaboratives appear to work best, at least initially, when the workload is shared by its members. This sharing encourages full participation and greatly reduces the costs borne by any one member organization.

An important issue to decide is whether the collaborative will prepare a budget and develop a mechanism to spend funds on contract services or other products. Experience shows that collaboratives work best when resource issues do not distract members from the group's activities. Settling questions about budgets and disbursing funds up front allows the collaborative to focus on substantive issues. Appendix A provides some example documents, such as a charter article, that could be used to define the collaborative.

How the collaborative will resolve issues and conflicts must be determined. Will votes be taken? Is consensus necessary to move forward on an identified activity or project? More formal entities may be able to operate by majority rule, but collaboratives are most often voluntary organizations, so consensus may be necessary for the collaborative to act as a group.

Sensitive security information will undoubtedly be part of the group's deliberations from time to time. An agreement to keep discussion details in the meeting room may help members speak freely about sensitive issues or raise important concerns that may run counter to the opinions of a majority of the collaborative's members. (The collaborative's members should check with the appropriate authorities regarding obligations to make their deliberations part of the public record.)

Step 7

Establish goals and specific steps for achieving them

Although everyone is busy, people will take time out for a meeting if they see a benefit. The collaborative should establish some short-term and long-term goals and, perhaps, identify some projects that will benefit the member organizations. Doing so will ensure that the work of the collaborative stays “fresh” and evolves with the changing nature of security concerns. For example, utilities that initially were concerned about completing their vulnerability assessments are now developing or finalizing their emergency response plans. These plans need to be tested and exercised and the lessons learned should be shared with the collaborative members. By sharing experiences and working together, members of the collaborative can increase efficiency and reduce redundancy related to water security at their respective organizations.

Working Together

The Milwaukee collaborative produced several documents concerning a response protocol for detecting *Cryptosporidium* or *Giardia* in finished water. It took the collaborative more time to produce these documents than a single agency would have required; however, by working together, the collaborative's members were able to ensure that the documents were reviewed thoroughly by experts in both the water works and public health departments. In fact, the members believe the collaborative produced more robust, higher quality documents than would have been produced by the individual agencies.

Membership in the collaborative may change over time as the issues that confront the collaborative evolve. The collaborative should have a mechanism for periodically reviewing its charter and working documents and reconfirming the interest and membership in the group.



Chapter 2. Operating and Maintaining a Security-Information Collaborative

This chapter provides some tips learned from the case studies described in Chapter 4 to help the collaborative run smoothly. Just as there is more than one type of collaborative, there is more than one way to make a collaborative successful. How well you do will depend on your group's needs, circumstances, and dynamics.

Remain flexible. The goal of the collaborative is to collect and share information over the long run. As circumstances change, your collaborative must adapt. For example, the Milwaukee collaborative was formed in response to an outbreak of cryptosporidiosis in 1993. The collaborative added heightened security and bioterrorism to its agenda following the 9/11 attacks, and these remain integral parts of its work.

Meet as often as necessary. Not every collaborative holds regular group meetings. How often a collaborative meets depends on its requirements, the workload of its participants outside the group, and its current circumstances. As noted in Chapter 1, some collaboratives are informal, and the initiating water utility may meet regularly with individual members, rather than bringing the entire group together. Other collaboratives may be more formal, but still not meet every month. Once the collaborative has been established, it may reduce its meeting schedule to every other month or even every quarter, or decide to meet more often as circumstances dictate. Members may rely on e-mail and telephone calls to keep current between meetings.

Share the work. Consider rotating the meetings among the collaborative's participating organizations. This helps spread the cost of the collaborative—primarily conference rooms, refreshments, and travel—among the members. Of course, if one participating organization is centrally located or able to provide conference space at little or no cost, holding every meeting at its site may be worthwhile.

Also, consider rotating the chairmanship of the collaborative regularly to help spread the burden of the work and avoid burnout. The chair rotates among BASIC's members every six meetings. Rotating the chair is not always necessary or feasible, however. As the central players in their collaboratives, the water works in Milwaukee and Newport News always chair their respective meetings.

Establish an agenda for each meeting. Having an agenda helps to focus and manage the discussion. The Milwaukee collaborative's agenda is set and does not vary much from meeting to meeting. Participants know what to expect and are prepared. Being far less formal, Newport News does not have regular group meetings, but its meetings with law enforcement officials follow a set plan. The BASIC chair prepares a loose agenda for each meeting, but members may introduce additional topics for discussion.

Decide whether to keep formal minutes. Minutes provide a consistent record and can be especially useful to anyone who misses a meeting. On the other hand, some participants may be reluctant to speak openly if minutes are taken. In fact, the rule that “what is said in the

room stays in the room” proved helpful for each collaborative studied. This can be especially important for any statements and information of a sensitive nature. If minutes are not kept,

individual members may decide to take their own notes. Be sure to follow up on all decisions, especially if there are no formal minutes.

Perhaps the most important benefit of a security information collaborative is the opportunity for utility officials to develop working relationships with the people on whom they will rely during an emergency before a crisis occurs.

Find ways to communicate between regular meetings. E-mail is an effective way for the members of the case study collaboratives to relay alerts and other information from outside sources and otherwise stay in touch between meetings. Regular telephone calls, list servers, and one-on-one meetings also help members maintain contact, especially when groups meet less often than once a month.

Commit staff time to water security. In the post-9/11 world, water security is an integral part of providing safe drinking water. For that reason alone, utilities should have staff members whose responsibilities include water security and who can take the lead when working with law enforcement, other utilities, or public health officials. These persons should play a leading role in the work of the security-information collaborative.

Involve senior management. Senior managers must support the process by giving their staff the resources, time, and authority to participate fully in the collaborative. In turn, the collaborative must keep senior management informed of its activities.

Make the best use of your resources. Most of the collaborative’s activities will be carried out by the people who belong to the group. The primary activity likely will be the regular periodic meetings, whose costs will be borne by the member organizations. The collaborative may also decide to sponsor other activities or programs. The individual organizations involved may pay for some of these programs as part of their regular operations. For example, Newport News Waterworks gave tours of its facilities and provided geographic information system (GIS) maps to law enforcement officials. BASIC created an emergency planning exercise paid for by the member utilities that chose to participate in the exercise. In other cases, the collaborative may want to finance an activity directly. Although they have not used it to date, BASIC has a mechanism to manage financial contributions and contract for outside services. The approach your collaborative takes will depend on local circumstances, including the financial resources of the participating organizations.

Chapter 3. Benefits of a Security-Information Collaborative

As the three case studies in the next chapter show, security-information collaboratives can accomplish a great deal. In all cases, the benefits not only met, but exceeded the participants' expectations. BASIC's members said they cannot overstate the dividends from communication and information sharing. The Milwaukee collaborative plays a critical role in maintaining contacts among its members, who said they hear about things they would not hear about otherwise. The Newport News collaborative has proven to be an excellent source of information about the water system for law enforcement in communities throughout the region.

In addition to these general benefits, the collaboratives studied have several concrete accomplishments. Examples of what a successful collaborative can achieve include the following.

Bay Area Security Information Collaborative (BASIC):

1. Jointly developed a Threat Condition Response Plan for the Homeland Security Advisory System in an effort to ensure a consistent response by Bay Area water utilities following the events of 9/11. The joint plan specifies a consistent approach across BASIC utilities under various threat conditions, ensures that each utility is adequately protected, and improves confidence that the utilities are fully engaged in security activities by providing information to the public on these matters.
2. Conducted a joint security tabletop exercise. This exercise brought together local police, fire, FBI, and hazardous materials (HazMat) agencies to discuss coordination during a terrorist event involving a water system.
3. Established a secure communication network among its members consisting of e-mails, pagers, and LAN-link communications.
4. Developed PowerPoint presentations on the formation and nature of BASIC, which members present to help other utilities form collaboratives.
5. Created a mutual aid resource list that enables members to share equipment and expertise.
6. Is developing a set of generic tabletop exercises to share among the member organizations and other utilities.
7. Is working to generate an emergency notification tree.
8. Is developing a generic guide for water system response to emergencies.

The Milwaukee Inter-Agency Clean Health Water Advisory Council:

1. Published a “Response Protocol in the Event Cryptosporidium/Giardia is Detected in Finished Water.”
2. Is developing a “Matrix of Risk of Cryptosporidiosis to People Who Drink Milwaukee Water.”
3. Is developing a cost/benefit model to explain the risks identified in the Matrix.
4. Is generating an emergency notification protocol.

Newport News Waterworks:

1. Identified all counties, cities, and police departments with jurisdiction in areas where Waterworks assets are located.
2. Met with uniformed patrol commanders, made presentations about the assets of the Waterworks, and provided GIS maps showing the location of critical infrastructure.
3. Has provided facility tours to all local police departments to inform officers about the chemicals stored at the utility and about the nature and function of the utility’s critical assets.
4. Met with the local FBI Field Office to discuss protocols and steps that would be taken should the water utility be threatened or an event occur.
5. Regularly meets with or communicates with local law enforcement through e-mail and telephone calls to share threat information and discuss other potential issues of concern.

System Teamwork

When a staff member noticed an individual photographing one of its reservoirs, a water utility alerted the other utilities that belong to its collaborative about the incident. These utilities determined that the same individual was also taking pictures of their systems. They informed the police, who apprehended the individual.

Chapter 4. Three Case Studies

The three case studies in this chapter show how utilities can work with member organizations to collect and share information. Each case study describes the collaborative's:

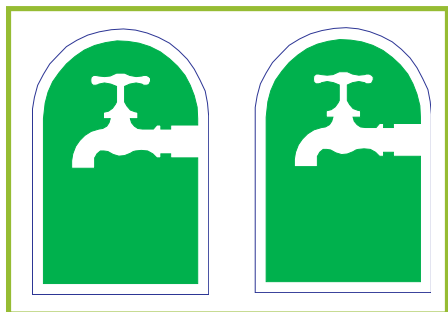
- History, including how it was formed
- Mission and goals
- Structure (e.g., formal organization with a charter or informal group)
- Meetings and the means its members use to communicate with each other
- Benefits and accomplishments
- Future activities

BASIC, a Utility-to-Utility Collaborative

History and Background

The San Francisco Bay Area is served by a number of water agencies. Six large agencies that use water from the Sacramento-San Joaquin Delta and the Hetch Hetchy reservoir in Yosemite National Park started BASIC. All are involved with CALFED, a consortium of state and federal government agencies that addresses issues concerning the Bay and the Sacramento-San Joaquin Delta Estuary. Prior to forming BASIC, the board members

and general managers of these water agencies kept in touch through CALFED and other forums. In April 1999, the general managers of several Bay Area utilities realized that they needed to cooperate more formally and consistently. That realization led to the creation of the Bay Area Water Agencies Coalition, which made such cooperation easier.



After the events of 9/11, six members of the coalition formed BASIC to share

security-related information. BASIC first met in October 2001. Two private utilities joined later. EPA became involved with BASIC after the passage of the Bioterrorism Act. The California Department of Health Services, Drinking Water Field Operations Branch (state primacy agency) has been actively involved with BASIC. The FBI is also involved as time permits.

Mission and Goals

One goal of BASIC is to provide its members with new information about what other utilities are doing to enhance their security. Another objective is to speak with a unified voice to the local media. Many members interviewed for this guide indicated that they needed to standardize their security practices and keep all members informed of technological developments. As stated in its charter, BASIC's mission is to support the development of security practices among Bay Area water utilities, the discussion of appropriate common security practices, and the creation of practical work products designed to facilitate a common level of security among member utilities.

Structure

BASIC is comprised of eight member utilities. Its formal charter provides a mission statement, establishes meeting protocols, and discusses financial arrangements. BASIC has no paid employees. While its charter allows BASIC to contract for services, it has not yet done so.

BASIC deliberately limits the size of its meetings. In the beginning, about 25 persons, two or three from each member utility, attended each meeting. Such a large group proved to be unwieldy. Eventually, members found that working with eight to ten persons fostered productive decision making. Now, with fewer participants, the meetings are more efficient and decisions are made more swiftly.

BASIC occasionally will have joint projects in addition to its regular meetings. Participation in the collaborative's projects is voluntary. To share in the results of these projects, however, members must participate in the project. One or two member organizations may fund a project in whole or in part, and other members may provide other services.

Meetings and Communications

At its first meeting, the group decided to meet on the fourth Thursday of each month. After an initial round of meetings, the group agreed to meet every other month. Members exchanged contact information and selected a chair, with the understanding that a new chair would be named by the collaborative each year.

Each meeting is hosted by a different member utility, which is responsible for providing meeting space and refreshments. Adhering to an informal agreement, whatever is discussed at each meeting does not leave the room. For the first several meetings, no formal meeting notes were taken. The group sometimes has used "non-disclosure" letters to track hard copies of sensitive information. Members treat all confidential information as if it came from their own organizations.

The loose meeting format can change slightly whenever a new person begins chairing the group, based on the preferences of the new chairperson. Members prefer an open discussion only loosely guided by an agenda. This format allows new ideas to come up and opinions to be thoroughly explored.

EPA Region 9 and the California Department of Health Services attend and participate regularly. Representatives of the FBI and other non-utility agencies occasionally attend the meetings to get to know local utility personnel. Several times in BASIC's existence, members have contacted the FBI to dispel rumors. Members have also received information from the FBI.

The members of BASIC remain in contact between meetings by e-mail. Another mechanism that has proven effective for the collaborative is the use of working groups made up of some of the collaborative's members. One working group, for example, has drafted guidelines for conducting tabletop exercises that all eight utilities can use to organize their own exercises.

Benefits and Accomplishments

BASIC members highly value the ability to compare and contrast security practices and share information with other Bay Area water utilities and feel that participation in the collaborative has strengthened their water security programs. Members can find out quickly what is going on in the other organizations because they remain in communication through the collaborative.

Among its specific accomplishments, the collaborative has developed threat response procedures very useful to members. The procedures help the utilities decide what to do when the National Homeland Security Advisory System status changes; for example, from yellow to orange. Member utilities find that having a list of options is useful, even if no specific threat to the water sector is identified when the national alert status is raised.

In 2003, BASIC conducted a tabletop exercise whose scenario involved the intentional contamination of pipelines throughout the Bay Area. The BASIC members sponsored the event in conjunction with the California Department of Health Services and Alameda County Office of Emergency Services, which made available free meeting space. Approximately 80 agencies participated, including the FBI, California state and local public health agencies, other public water agencies, HazMat agencies, and fire and police departments.

Future Activities

Some smaller utilities have expressed interest in joining BASIC, and the group does not rule out future expansion. However, members believe the collaborative's current size and structure can be maintained indefinitely. The persons responsible for taking BASIC into the future face the challenge of deciding whether to take on even larger projects.

The Milwaukee Inter-Agency Clean Water Advisory Council, a Utility-to-Public-Health Collaborative

History and Background

The Milwaukee Water Works provides water to the city of Milwaukee, WI and 14 surrounding suburbs. The collaboration between Milwaukee Water Works and the



Milwaukee Health Department began after an outbreak of cryptosporidiosis in April 1993. (The outbreak was described by one long-term member as “a wake-up call.”) The collaborative grew out of a mayoral directive to formally bring together officials from the water utility, the public works department, and the health department, as well as representatives of local and state government agencies. The Wisconsin Department of Natural Resources (the

state’s water quality regulatory agency) and local sewerage districts are involved. City officials recognized that routine communication between the water utility and public health department would be essential to ensure that waterborne outbreaks of this magnitude be prevented in the future.

Mission and Goals

The collaborative’s goal is to promote the regular exchange of information about water quality and public health-related science. It also helps manage the city’s response to water-related crises through a multi-agency team approach. It seeks to foster communication among the several public agencies responsible for source water, treatment plants, and community health and safety. Its goal is to share technical information regarding the measurement of contaminants and their removal from drinking water, emerging technologies, barriers to protect the public from potential contaminants, environmental influences to source water quality, and trends in disease surveillance and select pathogen incidence.

Structure

There are two parts to the collaborative. The Inter-Agency Clean Water Advisory Council (IACWAC) was formed by the Milwaukee Common Council in 1994 and charged with the overall coordination of all water quality issues facing the community. It brings together the heads of the water, health, and engineering departments, and representatives of state regulatory agencies and the local sewerage districts. The IACWAC reviews, develops, and implements policy. The second component is the Water/Health Technical Subcommittee, which brings together staff with expertise in epidemiology,

environmental science, laboratory management, water treatment processes and system operations, and public health to exchange information, foster communication, and discuss water quality issues.

The subcommittee presents any proposals or recommendations it develops to the IACWAC. The Water Works Superintendent and the Health Department Manager for Disease Control and Prevention are members of both the IACWAC and the Water/Health Technical Subcommittee.

The collaborative helps manage the city's response to crises through a multi-agency team approach.

Meetings and Communications

The IACWAC meets quarterly. It reviews developments in the community and directs the work of the Water/Health Technical Subcommittee. The collaborative's technical work is done by the Water/Health Technical Subcommittee, which meets once a month. (If an incident, event, concern, or issue needs immediate attention, members are prepared to meet within 1 hour after notification.) Meetings are held at the same location each month. The water and public health agencies communicate regularly and share information through the subcommittee.

The agenda typically is the same for every scheduled meeting of the Water/Health Technical Subcommittee. It includes an update on water quality, reports on other water treatment projects (such as the status of capital improvement construction projects), updates on drinking water treatment plant status and sewage treatment, and an update from the health department. The health department update covers disease occurrence trends, laboratory capacity, and environmental matters such as watershed influences, source water quality, and surface water testing and monitoring.

The subcommittee takes no formal votes; all matters are decided by consensus. Attendance is required by the relevant department heads. The subcommittee reports on its activities at the IACWAC quarterly meetings.

The Water/Health Technical Subcommittee does not take notes or compile formal minutes. The advantage of the current arrangement is that members may be more willing to share their views than they would be if formal notes were taken. The disadvantage is that some material may need to be repeated at meetings for those who missed a previous meeting, and some of the detail and nuance of complex issues may be lost. Because the subcommittee submits a report to the IACWAC, the substance of the group's meetings enters the documentary record.

Benefits and Accomplishments

Members identified many benefits to the collaborative. Its meetings help build professional rapport and understanding between the water utility and the health department, which have different organizational cultures. The meetings also help representatives of each organization develop insight regarding the challenges faced by their counterparts in the other organizations. The scientific bases for various activities are shared and understood, and new developments in the various professional disciplines are reviewed. Members find that the collaborative helps promote problem solving and team building by bringing together professionals who have different qualifications and perspectives.

The Water/Health Technical Subcommittee provides a forum that lets its members work out problems methodically and creatively. Its discussions help to ensure that all sides thoroughly understand all aspects of an issue before moving forward. Sometimes the discussions are long, but participants agree that this is necessary for all aspects of safe drinking water to be discussed.

Specific accomplishments include the development of procedures to notify the public in the event of a contamination or disease outbreak. The collaborative also recently updated its emergency response plan and is now working on a risk-assessment matrix for selected pathogens.

Future Activities

Group members are satisfied with the collaborative and have no immediate plans to make changes. However, the collaborative's members recognize that they need to avoid complacency and work to sustain its efforts. The representatives of each organization will continue to bring topics and projects of mutual interest to the collaborative. Likely topics include water security, new laboratory methods to improve health risk assessment, disinfection by-products, and early warning and detection technologies. The collaborative members believe that this will ensure that the collaborative will continue to provide benefits to its participants into the future.

Newport News Waterworks, a Utility-to-Law-Enforcement Collaborative



History and Background

Newport News Waterworks (NNW) provides water to Newport News, VA, as well as Hampton, Poquoson, and portions of York and James City Counties. It is surrounded by military installations: two army bases, one air force base, and one shipyard where nuclear carriers and submarines are built. The Norfolk

naval base, to the south of Newport News, is among the largest in the world. About nine miles to the west of Newport News is the Surrey nuclear power plant. In view of its geography and location, as well as the nature of the communities it serves, NNW takes security very seriously. The collaborative began immediately following 9/11 with informal discussions among the heads of local law enforcement departments and the Waterworks. The collaborative's status was recognized more formally after a reorganization at NNW, which created a full-time security/compliance manager who began working with local law enforcement. This manager went to the local authorities to provide them as much information as possible and establish working relationships.

Mission and Goals

The NNW collaborative was started to strengthen ties with local law enforcement. The utility uses the collaborative as a way to provide information about the Waterworks to law enforcement in a consistent and timely manner. The collaborative also works to coordinate emergency response plans between the Waterworks and law enforcement.

Structure

An operations support manager fills the full-time water security position at NNW. NNW also has nine other water system employees from various disciplines who are part of a security advisory team. The collaborative itself is informal. The system owns property in five law enforcement jurisdictions and two counties. NNW meets and works with officers from all jurisdictions to remain aware of security threats in the area. The Waterworks has informal agreements with some jurisdictions, but none in writing. Under the current agreement with the Newport News Police Department, if the Homeland Security Advisory System alert level rises to orange, the police will step up vigilance. If the alert level rises to red, both the York County Sheriff's Department and the Newport News Police Department will provide additional personnel to guard assets. These assets include the city's two surface water treatment plants and large watershed property, which includes a public park.

NNW works with each law enforcement jurisdiction individually. Its security manager has visited each jurisdiction several times and maintains regular contact with each. NNW also works closely with the military installations in the area. It communicates with agents in the Office of Special Investigations at Langley Air Force Base and has contacted Fort Eustis and the Navy Head of Public Works. In addition, it has approached local fire departments, SWAT teams, and HazMat teams. NNW has also made contact with bomb squads and specialists in explosive ordnance disposal at local military installations.

Meetings and Communications

NNW prepares and outlines important information about its infrastructure and operations for law enforcement officials. It maintains contact with uniformed patrol commanders, who are able to understand the threats and are in a position to assign personnel to guard infrastructure. NNW meets with law enforcement officials when necessary, and remains in regular contact by telephone and e-mail. Formal notes are not taken at meetings.

Meetings are not scheduled regularly. While some law enforcement officials feel regular meetings could be worthwhile, they agree that the current approach works well. It responds flexibly to the varying intensity of security concerns and, when there is no urgent issue, there is no need to meet.

Benefits and Accomplishments

NNW has successfully built a network of contacts within the law enforcement community in Newport News and surrounding areas. The members of the collaborative know each other, and they know who to contact when crises arise. During a recent incident in which a man was reported missing, a search of the Waterworks' property was quickly organized with just a few phone calls. Local police officers were able to gain access to every building on the property, the Department of Inland Fisheries used their boats to troll the reservoir in case he had drowned, and the Virginia State Police used an airplane to search from the sky. Other agencies were also quickly involved in assembling a search party with diverse skills.

NNW has also developed an emergency response plan and provided information on potential water-related security threats to the local police. NNW also allows local SWAT teams to train on its property. At each organization it visited, NNW made presentations and provided GIS maps of critical assets located within that organization's jurisdiction. Law enforcement officials were given tours of NNW facilities. NNW provides information to HazMat teams about the location of chemicals to assist in any emergency response. It also established e-mail distribution lists covering all five law enforcement jurisdictions. The uniformed patrol commanders agree NNW often gets them information faster than their other sources. They add that the high quality of communication with NNW helps them ensure there are no inconsistencies between emergency response plans developed by the police department and by NNW.

The future of the NNW collaborative depends on the continuity of personnel. The collaborative has been successful because of the efforts of the people involved and the personal relationships they have developed. The challenge they face is to institutionalize these relationships. Although no formal succession plan has been developed, all participants are aware of the issue, and there is general recognition of the importance of continual participation by each agency.

What Makes a Collaborative Successful?

The three cases presented here are all successful collaboratives. While each has different needs and circumstances, they share some characteristics that contribute to their success, and they all provide useful lessons for utilities interested in starting their own collaboratives.

External events played a large role in each case. The terrorist attacks of 9/11, for example, resulted in a heightened focus by the utilities on security and inter-organizational cooperation. Natural disasters—such as Milwaukee’s cryptosporidiosis outbreak and hurricanes in the Southeast—also focused attention on the need for on-going cooperation. Crises not only highlighted the utilities’ water security vulnerabilities, they made clear the need for cooperation in collecting information and communicating with each other and the public.

Two factors played central roles in the successful formation and continued operation of the collaboratives. First, the people involved in each collaborative are committed to its mission and work very hard to ensure success. They put considerable time and effort into its formation and take their commitment to the collaborative very seriously. Second, senior management fully supports the process. In each case, it is clear to the members of the collaborative that their management expects them to participate in its activities. It also is clear that management will provide the time and resources necessary for the collaborative’s success. In addition, management provides the members of the collaborative the authority they need to make decisions and take action.

The size of the collaborative also plays a role in its success. In each case, the number of participants is limited by design. Meetings are cumbersome if too many people are at the table, and the discussions can become less frank and open. There is no magic number that will make or break a collaborative; rather, the size that works best will depend on the people and organizations involved and the format of the meetings. Neither is there one format or structure that works best. The Milwaukee collaborative is a relatively formal organization, with a charter from the mayor, a set agenda for the meetings, and a relatively fixed number of participants. Newport News, on the other hand, takes a very open approach, with one-on-one meetings that occur regularly, but not on a set schedule. BASIC developed its own charter and allows for some flexibility in its scheduled meetings and its members’ participation. Each collaborative settled on an approach that met its circumstances and its immediate needs.

A challenge for any cooperative effort is to overcome personality differences. Collaboratives can bring together people from diverse backgrounds and disciplines with very different views on how to organize and proceed. BASIC is successful, in part, because its members share a common background and culture. On the other hand, Milwaukee brought epidemiologists and health care professionals together with water system operators and engineers. Despite differences, this collaborative is successful because its regular meetings help build mutual trust and respect. In the end, members saw their differences as contributing to better ways to help solve problems when they worked together as a team.

As time passes, the urgency generated by the 9/11 attacks diminishes. The groups recognize the need to stay focused on the security concerns they face. Utilities will continue to participate actively in a collaborative that addresses issues that are immediate and important. Therefore, a collaborative needs a specific focus, agreed on by the members, at all times. The focus can change, however, as circumstances change and as old problems get solved and new ones arise.

Conclusion

The three case studies demonstrate many of the advantages and benefits of security-information collaboratives. While the collaboratives require the commitment and dedication of its members, they do not pose a large burden to their members. In each case, the collaborative proved to be an efficient way for water systems to communicate regularly and share information on an on-going basis with other utilities, the public health community, and first-responders. The collaboratives help water systems stay current.



Appendix A. Sample Resource Documents

This chapter includes examples of charters and working guidelines for security-information collaboratives. Formal names for organizations are not shown; instead, the type of organization is shown in brackets in place of the name. Also included is a sample agenda of a collaborative meeting.

I. Charter Article

CHARTER ARTICLE REGARDING FORMATION OF THE [Name of Collaborative]

WHEREAS, the undersigned indicate their desire to support the common goal of developing security practices among water utilities, the creation of practical work products designed to facilitate a common level of security among the member utilities, and discussion of appropriate common security practices; and

WHEREAS, operations and emergency response managers of the Signatory agencies recognize the need for coordination and mutual support in planning for water system security in the [region] and have been meeting for this purpose on an ad hoc basis since [date]; and

WHEREAS, the operations and emergency response managers of the Signatory agencies also recognize the need to leverage their resources to respond to real and perceived water system security breaches in the [region];

THEREFORE, the undersigned agencies collectively have agreed to informally establish this [name of collaborative] and will work in accordance with the following procedures:

1. The purpose of [Name of Collaborative] is to:

- Prepare realistic definitions of credible threats to the systems within the region
- Discuss and identify common vulnerability assessment processes
- Develop common response protocols
- Identify access to a secure central store of materials for response to, and treatment of, water contaminated with nontraditional materials
- Conduct workshops (on water quality monitoring, response protocols, vulnerability assessment formats, etc.)
- Conduct region-wide exercises

2. The functions of [Name of Collaborative] shall be to:

- Act as liaisons between technical experts and [the various collaborative members]
- Coordinate development of security related procedures among water utilities
- Advise on developing security policy, recommendations and suggestions promoted by regulators
- Provide leadership on issues related to state or federal regulation
- Coordinate information on security preparations, training and response
- Identify new areas of cooperation among the [members]
- Explore financing and organizational alternatives as needed

3. Chair – A chairperson shall be elected by the participating agencies. The Chair shall rotate among the members every 6 months. The Chair is responsible for handling coordination and administrative functions of the group. This includes, but is not limited to, record keeping, preparation of minutes, mailings, scheduling meetings, clerical assistance, agenda preparation, and follow-up on assignments and coordination. Each utility will identify a key water security staff member who will serve as the primary representative for the utility.

4. Meetings – Monthly meetings of [name of collaborative] shall be held. The location shall rotate between the members.

5. Contracting and Financial – [Name of water system] shall be the initial lead agency to manage financial contributions and to contract for outside services. The lead agency shall rotate among the members approximately every 6 months, or as deemed appropriate by members. For each work activity, a scope of work will be prepared and a task leader identified. Each member will determine its own level of interest and participation for each work activity. The hiring of consultants will comply with the procurement policies of the lead agency. The lead agency will provide a monthly report of financial and contracting status.

6. Resolution of Conflicts – In the event of conflicts, [name of collaborative] members shall meet and seek to resolve issues through consensus. As needed, conflicts can be elevated to the member agencies' general manager for resolution.

7. Term of Agreement – This Charter shall be in effect for one (1) calendar year from the effective date. The Charter can be terminated or extended upon the agreement of the member utilities.

8. Other Participants – The U.S. EPA and [State health services] are welcome to assign representatives and be active participants in [name of collaborative]. Participation by other water utilities in the [region] will be reviewed by the member agencies, as appropriate.

9. Sensitive Information – Sensitive information shall not be shared with outside parties without the consent of the contributing member and the consensus of the members.

II. A City Charter Establishing a Collaborative

Resolution establishing a Clean Water Advisory Council

Whereas, The [Fact Finding Committee] found that the numerous governmental agencies which are involved in surface water health and quality issues have not always communicated well with each other; and

Whereas, The City's response to the water crises are managed through a multi-agency team approach which made participating agencies more sensitive to the importance of inter-agency communications; and

Whereas, the creation of an [Advisory Council] composed of representatives of agencies concerned with water quality issues would continue the team approach to solving water concerns and would improve communication with all communities that are served by the [water utility]; and

Whereas, [Fact Finding Committee] recommended creation of an [Advisory Council] that meets on a regular basis; now, therefore, be it

Resolved, Council of the [Name of City], that an [Advisory Council] is established, consisting of representatives of the Department of Public Works (DPW) administration, [water utility], DPW engineers division, the [regulatory agency], the [local wastewater treatment plant], a representative from the affected communities that are [water utility] customers, and [all other involved parties]; and, be it

Further resolved, that the chair of the [Advisory Council] shall be the representative of the DPW Administration and the council shall be staffed by the DPW administrative staff; and be it

Further resolved, that the [Advisory Council] shall make semi-annual reports to the Council, the Mayor, and the governments of each of the communities that are also [water utility] service customers; and, be it

Further resolved, that the Council strongly recommends that the [Advisory Council] meet on a regular basis to facilitate a multi-disciplinary response to water quality issues.

III. Working Guidelines

1. INTRODUCTION

The Committee was formed as an interdisciplinary working group of professionals to provide technical support, expertise and recommendations to the water quality work group in the areas of:

- Water treatment process and system operation.
- Source water impact and influences.
- Health impact and influences.
- Emerging research areas.

The Committee is composed of representatives from diverse affiliations who meet regularly to exchange information, foster communication, discuss water quality issues and evaluate impacts to the public served by the water system. The Committee members are listed in Attachment A.

2. WORKING GUIDELINES FOR CONVENING

The Committee has been established and meets regularly to prepare members to make sound professional judgments in the most informed and expeditious manner when called upon to do so. Convening the committee can be based on varied activities, which may have the potential to affect water quality, including, but not limited to:

- Water Treatment Process event - Failure or interruption in key water treatment process(es) or violation of established water quality standards.
- Distribution System event – Failure of a major pumping station, or large feeder main break which may result in negative pressure in portions of system or contamination of system.
- Water Detection event - Evidence of the presence of pathogens or microbials in treated water effluent or distribution system. The Committee has established a Response Protocol which will be used in the event *Cryptosporidium* or *Giardia* is detected in the treated water effluent/finished water.
- Environmental events – Meteorological events, excessive rainfall, sewer treatment plant bypass or discharge, outfall discharge of collection sewer system, or evidence of a major water system cross connection or contamination of the watershed.
- Community Disease – Evidence of disease outbreak in the community where available data suggests drinking water as a potential source of infection.
- Natural disaster – Event which may adversely affect water quality including flooding, tornado or power loss.

ATTACHMENT A

COMMITTEE MEMBER LISTING

CHAIR

Administration and Projects Manager, Waterworks

WATERWORKS

Superintendent

Water Quality Manager

Acting Water Plants Manager

Water Plants Manager

Chief Design Engineer

ENVIRONMENTAL ENGINEERING

Storm Water Manager

HEALTH DEPARTMENT

Director of Laboratories

Chief Microbiologist

Chief Virologist

Epidemiologist

Environmental Hygienist

Nursing Coordinator

SEWERAGE DISTRICT

Microbiologist

REGULATORY AGENCY

Bureau of Drinking Water-Public Water Systems

Water Supply Engineer

IV. Example of a Meeting Agenda

1. Current Events
2. Water Quality Update
Protozoa
Lab Services
3. Health Update
Lab Report
Surveillance Security Monitoring
Environmental
4. Plant Updates
Water Treatment Plant 1
Water Treatment Plant 2
5. Sewerage District Update
6. Regulatory Agency Update
7. Concerns/ General Comments
8. Note of Next Meeting

V. Example of a Meeting Agenda

1. Welcome
2. Introductions
3. Request to review and approve minutes from last meeting
4. Telephone list checked and updated (passed around)
5. Meeting schedule confirmed
6. On-going business
7. New business
8. Roundtable - general discussion (additional items for this meeting)
9. Future items for next meeting
10. Confirm date and location for next meeting
11. Adjourn



Additional information may be obtained through the
National Homeland Security Research Center's Web site:
www.epa.gov/nhsrhc





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Agency

National Homeland Security
Research Center
Office of Research and Development
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